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PULMONARY TUBERCULOSIS

THE PRESENT STATUS OF SURGERY IN ITS TREATMENT*

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Despite the tremendous advances made in the surgery of pulmonary tuberculosis, it should be accepted at the outset that the employment of surgery is only a part of the recognized medical methods of treatment. Surgery is largely directed to the closure of cavities, the elimination of sources of sputum, derived from secondary bronchiectasis, and the closure of tuberculous empyaemas—the cause of profound toxaemia.

Unfortunately a large body of medical opinion, having seen and treated isolated cases of pulmonary cavitation with long-term survival does not appreciate that such cases are exceptional. It should be appreciated that statistical evidence on a large scale has shown that at least 50% of persons harbouring a cavity up to 4 cm. in diameter, even whilst being treated conservatively, have died from their disease within four years (Coope). American figures have shown that of cases refusing thoracoplasty for cavities up to 5 cm., 90% are dead within five years. These are accepted large-scale figures and the incidence of isolated cases of cavity closure should not conceal the fact that tuberculous cavities are highly dangerous not only from the point of view of the patient's survival, but also as a source of constant infection to the rest of the community.

It is necessary, therefore, to explain very briefly why tuberculous cavities remain open. Such cavities result from the rupture of a caseating tuberculous focus into a bronchus and, unlike most abscess cavities, persist despite adequate drainage. The factors responsible for their persistence are:—

1. *Continued ulceration* of the cavity wall.

2. *Pull of the Chest Wall.* In early cases retraction of the cavitated area from the chest wall can take place, allowing compensatory emphysema of the surrounding lung to occupy the space previously occupied by the disease. In advanced cases the cavitated area is attached to the chest wall and the negative intra-pleural pressure (resulting from the chest wall pull) does not allow the diseased area to retract and cavitation persists.

3. *Bronchial Factors.* All cavities communicate with the bronchial tree and are of two varieties:—

a. Tension Cavities. These result from a ball-valve action in the draining bronchus allowing ingress but not egress of air. Such cavities have a positive pressure —either permanently or intermittently.

b. Open Caseating Cavities. In these the pressure cannot be altered by the introduction of air through a needle as free bronchial drainage exists permanently. These persist due to the pull of the chest wall.

The basis of collapse therapy depends on altering the inspiratory tug on the bronchial wall. Relaxation of the lung results in reduction in its volume with narrowing of the bronchi. This converts a partial to a complete bronchial stenosis, with closure of the cavity.

Before discussing some of the more recent surgical advances, I would like very briefly to review the present position of the older methods of collapse.

Pneumothorax is being used much more guardedly than before, is being induced later in the definitive treatment and is being abandoned much more readily in the presence of inadequate collapse, recurrent pleural effusion and when cavities persist despite a perfect pneumothorax.

†Pneumothorax should not be induced in acute exudative lesions, in cases of tuberculous bronchitis with signs of bronchial obstruction, in extensive pulmonary destruction, tension cavities, tuberculomas, or in acute pleurisy with effusion. All pneumothoraces, even when they appear adequate from the point of view of collapse, should be thoracoscoped to exclude paravertebral adhesions and to confirm that there are no subpleural tubercles.

Extra-pleural Pneumothorax. This has in my hands been almost entirely discarded, though personally I still perform a limited number in young adults and in poor-risk cases with bilateral cavitation. Despite the low primary mortality and morbidity, the all too frequent late complications of empyaema and inexpandable lung render it a disappointing operation from the long-term point of view. In some of the more limited extra-pleural strips we have induced an oleo-thorax, a procedure which, in my opinion, is used too infrequently. In the last two years there have been innumerable reports utilizing various inert substances, e.g. lucite balls, fibre glass and plexiform tissue. Very encour-

* Report of a paper read at a meeting of the Southern Transvaal Branch.

† This new concept has resulted from the appreciation of the high incidence of late complications—chiefly inexpandable lung and tuberculous empyaema.

aging reports were at first obtained of cavity closure with none of the late complications of tuberculous infection and empyaema. Within recent months, however, there are reports, quite as numerous, of the danger of these so-called inert substances and numerous examples of infection are now being recorded.

Thoracoplasty. This has proved to be one of the most successful procedures in the surgical treatment of pulmonary tuberculosis. The primary mortality is low, the percentage of cavity closure and sputum conversion high, and the late results extremely good. In 1947 Holme Sellors of London reviewed 633 consecutive thoracoplasties with an operative mortality of 2.7% in the first four months, 84% with negative sputum, and 91% with cavity closure. There is great variation in the type of operation performed. The British school follows the Scandinavians in advising the Semb apicolysis almost as a routine and maintains that this is an integral part of the operation, in order to eliminate the vertical stresses on the cavitated area. The American surgeons do not usually do an apicolysis but believe the removal of the transverse processes are all-important.

The scope of thoracoplasty is being continually extended and to-day age is no contra-indication, provided the patient's general condition is satisfactory. More and more bad-risk patients are being brought into the ambit of thoracoplasty closure by the judicious pre-operative use of streptomycin and minor procedures such as phrenic crush and pneumoperitoneum which, combined, enable the bad-risk patient to be converted into a suitable surgical risk.

The *chief indications* for thoracoplasty are:—

1. Unilateral cavitation for which an artificial pneumothorax has failed, provided the contra-lateral lung is clear or has minimal disease, either static or controlled by a mantle artificial pneumothorax.
2. Tuberculous empyaema.
3. Localized chronic fibrotic disease should be treated by a primary thoracoplasty.

Thoracoplasty should not be undertaken if there is extensive active disease in the contra-lateral lung, in the presence of tuberculous bronchial granulomas, broncho-stenosis, exudative disease, large cavities of tension type, tuberculomas, adolescents, associated non-pulmonary disease of grave prognosis, large solitary basal cavities. Patients with a low respiratory reserve should not be operated upon.

Monaldi Drainage. I have found this most disappointing, though theoretically the results should be good. A fine catheter is introduced through the chest wall by means of a trochar-in-cannula introduced into the tension cavity. Continuous negative suction is then applied to the cavity, allowing the draining bronchus to close. Cavity closure can then ensue. The method certainly eliminates toxaemia, reduces the size of the larger cavities and, as a pre-thoracoplasty measure, is of considerable value.

RECENT SURGICAL METHODS

1. *Pulmonary Resection.* The first attempts at extirpation of tuberculous lung tissue were performed towards the end of the last century. Macewen successfully performed a local resection as long ago as 1895. For many years, however, it was believed that direct trauma to the tuberculous lung was dangerous and that the local complications of tuberculous spread and reactivation as well as the danger of systemic dissemination were insurmountable difficulties. It is only with the general improvement in anaesthesia, blood replacement and resection technique that the last seven years has seen this new method employed with any measure of success in large series of cases.

The chief risks of resection of tuberculous lung tissue as opposed to resection for non-tuberculous conditions were:—

a. Spread to the opposite lung or remaining lobe as a result of spill-over of tuberculous sputum.

b. Re-activation of arrested foci in the residual lobe or lung. This occurred because these residua became emphysematous in an attempt to fill the thoracic cage, and thus lit up these foci.

The risk of spread has been minimized in several ways. Overholt has popularized the face-down position, which prevents infected secretions from spilling over to the other lung. Alternatively, some form of bronchial blocker is used to prevent secretions entering the bronchial tree during the course of the operation. It is this method that we employ here. Thirdly, intensive chemotherapy pre-operatively has diminished and in many cases temporarily abolished the positive sputum. Penicillin, too, has helped by minimizing secretion.

Re-activation of pre-existent foci has been minimized by avoiding compensatory emphysema of the remaining lobes by inducing a pneumo-peritoneum and crushing the phrenic nerve for basal resections and performing an upper thoracoplasty following upper lobe resections. Following pneumonectomy, a thoracoplasty should be performed on that side unless the normal lung was emphysematous pre-operatively. Streptomycin has again undoubtedly played an important role in minimizing re-activation.

INDICATIONS FOR RESECTION

I. *Tuberculoma.* On X-ray this appears as a solid spherical mass, but on tomography the density varies and there is often an irregular cavity within. Most authorities urge resection for this type of lesion, not only because of the difficulty of differentiating it from other conditions, e.g. tumour, but also because of the proven statistical danger of breakdown compared to the extremely low operative risk and morbidity.

2. *Post-thoracoplasty Cavities.* Resection in these cases can be extremely difficult, especially if an adequate apicolysis has been performed.

3. *Broncho-stenosis.* In the presence of a fibrous stricture, thoracoplasty is contra-indicated as an atelectatic, pus-containing bag will be produced. Untreated, a complete stricture retains secretions and a gross tuberculous bronchiectasis ensues. Occasionally a carnified bronchiectatic lobe may be the site of repeated severe haemoptyses necessitating resection.

4. *Persistent cavities,* after adequate pneumothorax treatment should be resected, especially if they are in the lower lobe.

5. *Apical cavities* limited to an upper lobe where

thoracoplasty would involve too great a sacrifice of lung tissue.

6. *Multiple unilateral tension cavities.*

7. *Destroyed lung*, provided the disease is unilateral.

8. *Very large localized cavities.* These respond poorly to treatment.

9. *Tension cavities*, according to some authorities, should be resected primarily.

10. *Broncho-pleural fistula* with persistent underlying cavitation.

It should be noted that of the first 616 cases of resection reported in the American literature up to May 1948, there was a total two-month post-operative mortality of 15%; 26% of the cases operated upon had spread of the disease after the operation.

Charles P. Bailey in the *Journal of Thoracic Surgery* (1949), analyses 200 resections. These were divided into two groups, 100 with and 100 without streptomycin.

	Deaths	*Spread*	*Tuberculous Empyaema*
100 without streptomycin ...	27	15	8
100 with streptomycin	16	1	1

Not only does he show a much lower mortality with streptomycin, but the latter group included cases with a much graver prognosis. At the end of one year he reported that 90% of his survivors had negative sputa.

Holmes Sellors, in a recent issue of *Thorax*, reports a 12½% mortality with little difference between those having streptomycin and those without it.

II. *Decortication in the Non-expandable Pneumothorax Lung.* A fair percentage of lungs cannot re-expand after artificial pneumothorax treatment. As a result of the highly negative intra-pleural pressure the patient has a sense of tension and becomes dyspnoeic. The chest is indrawn, the mediastinum is displaced to the side of the lesion, the opposite lung becomes emphysematous, recurrent febrile effusions occur and ultimately tuberculous empyæma results. In the past, treatment has been either a phrenic crush if the space is small, continuation of the artificial pneumothorax indefinitely, conversion into an oleo-thorax or thoracoplasty for the empyaema.

If the cause of the non-expandable lung is the result of original diffuse parenchymal lung disease with subsequent fibrosis, thoracoplasty should still be performed. If due to broncho-stenosis resection should be undertaken, but if it is due to the laying down of a hyalinized fibrous envelope on the visceral pleura, removal of this peel will result in re-expansion of the lung and obliteration of the pleural space. This may be necessary to improve respiratory function for contra-lateral collapse, to avoid thoracoplasty, or to obliterate the artificial pneumothorax space to prevent the formation of an empyaema.

III. *Decortication in Tuberculous Empyaema.* This operation has not stood the test of time but there are several series reported in the literature where long-standing empyaemata have been decorticated with re-expansion of the previously uninvolved portions of lung.

IV. *Extra-pleural Pneumonectomy and Pleurectomy.* Sarot of the Seaview Hospital has developed this operation for those cases in which active lung pathology necessitating resection has been combined with chronic basal tuberculous empyaemas. To avoid the risks of acute post-operative tuberculous empyaema reactivation, with the likelikhood of a broncho-pleural fistula, he performs an extra-pleural resection, i.e. within the ribs but outside the pleura. This dissection appears to be very shocking, but the results in his hands, at any rate, have been most gratifying.

V. *Cavernostomy* (*External Cavity Drainage*). This procedure consists of draining the tuberculous cavity externally. It is indicated for those types of cases in which ordinary collapse measures are either unlikely to result in closure, e.g. lower-lobe cavities, where the general condition of the patient precludes a thoracoplasty or resection, or where a cavity has persisted after thoracoplasty.

VI. *Bronchoscopy.* This minor diagnostic procedure carried out under local anaesthesia should, in my opinion, be performed in the following types of cases:—

a. Prior to Major Surgery. To exclude broncho-stenosis and tuberculous bronchitis.

b. In all cases of *tension cavity.*

c. Prior to inducing an artificial pneumothorax if there is any wheeze or sign of atelectasis suggesting bronchial obstruction.

d. In any artificial pneumothorax where there is atelectasis.

e. To exclude neoplasms where collapse is present.

f. Where a positive sputum is obtained without any evidence of disease on X-ray.

g. Episodes of sputum retention with fever.

Judd (1947) reporting on 500 consecutive bronchoscopies found 36% showing evidence of tuberculous bronchitis. Jarman (1949; *Tubercle*) found 25% out of 800 cases. When, however, bronchoscopy was utilized in those cases with the above indications, 51.5% had bronchial lesions.

CONCLUSION

I should like to condemn the indiscriminate use of streptomycin. In a disease as protean as tuberculosis and usually presenting in such an advanced form, the temptation to use a drug which in almost every case will result in early amelioration of the patient's symptoms should strenuously be resisted. A breed of streptomycin-resistant organisms in chronic tuberculotics can readily disseminate these resistant organisms to other persons unless the drug is used as part of a planned campaign in which the employment of surgery in the future should have been carefully considered.

Streptomycin should be used under the following conditions:—

1. In all pulmonary resections.
2. In all major intra-pleural surgery.
3. For acute post-operative spread, following thoracoplasty.
4. Intra-pleurally for tuberculous empyaema.
5. For tuberculous sinuses.
6. For Schede thoracoplasties.
7. In all cases of tuberculous bronchitis.
8. Streptomycin can be used in those cases which, whilst awaiting surgery, have had an acute exudative spread, and in all sub-standard risks for major surgery.

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VAN DIE REDAKSIE

BYDRAES DEUR DIE PUBLIEK OM PASIËNTE OORSEE TE STUUR

In die afgelope maande was die dagblaaie verantwoordelik vir publisiteit aan die geskiedenis van hulpbehoewende gevalle wat na bewering spesiale mediese of snykundige behandeling oorsee nodig het. Saam met hierdie soort publisiteit het hulle hul ruimte vir bydraes deur die publiek beskikbaar gestel ten einde sulke reise moontlik te maak. 'n Vrygewige publiek het elke keer uitstekend op hierdie beroepe gereageer.

In beginsel is dit uitstekend, mits die gevalle wat vir sulke behandeling gekies word (en nie die onkoste kan bekostig nie), oorsee die verligting kan kry wat nie in hierdie land aan hulle gegee kan word nie. Ons moet egter in gedagte hou dat die krag van beroepe deur middel van die leke-pers ongetwyfeld in krag sal afneem na mate die beroepe toeneem. Indien die vrygewigheid van die publiek herhaaldelik benut word vir sake wat nie werklik sulke buitengewone liefdadigheid verdien nie, sal die dag aanbreek wanneer 'n werklik hulpbehoewende pasiënt 'n maatreël sal moet ontbeer wat sy lewe mag red.

Met die oog op die omvang wat hierdie herhaalde beroepe begin aanneem, rus daar 'n ernstige verantwoordelikheid op die dagblaaie wat met die grootste opregtheid en geheelenal te goeder trou hierdie veldtogte begin. Die voorstel dat 'n insamelingsveldtog van hierdie aard van stapel gestuur word, moet in belang van die publiek self deur 'n heeltemal onpartydige liggaam in hersiening geneem word alvorens die beroepe gedoen word. Die besluit om 'n pasiënt oorsee te stuur is ongetwyfeld 'n kliniese. So 'n reëling kan die maklikste slaag indien dié Suid-Afrikaanse geneeshere wat volkome met die omstandighede van elke afsonderlike geval vertroud is, in aanraking gebring kan word met die buitelandse geneesheer of snydokter wat genader word. Tensy sulke voorsorgmaatreëls getref word, kan gevalle wat vir behandeling ongeskik is op vrugtelose reise weggestuur word met die gevolglike verspilling van geld wat deur die publiek bygedra is.

Met die oog hierop skyn dit wenslik te wees dat 'n geneeskundige komitee in die lewe geroep word om dagblaaie in verband met hierdie sake van raad te dien en te lei. Ons is seker dat indien 'n dagblad wat gevra is om 'n veldtog van stapel te stuur sodat 'n pasiënt oorsee gestuur kan word die Mediese Vereniging nader, laasgenoemde maar te gretig sal wees om die dienste van sy knapste en mees ervare lede gratis tot die beskik-

EDITORIAL

PUBLIC SUBSCRIPTIONS TO SEND PATIENTS OVERSEAS

In recent months the daily newspapers have been responsible for publicizing the history of deserving cases alleged to require special medical or surgical treatment overseas. Parallel with this kind of publicity, they have opened their columns for public subscriptions to make such trips possible. A generous-hearted public has, on each occasion, responded magnificently to these appeals.

In principle this is excellent, provided that the cases chosen for such treatment (and unable to afford the expense involved) are capable of obtaining overseas a relief which cannot be given to them in this country. We must bear in mind, however, that the force of appeals through the lay press will, undoubtedly, diminish in inverse proportion to the frequency with which they are launched. If public generosity is repeatedly tapped for causes not thoroughly deserving such unusual charity, the day will soon come when the really deserving case will be deprived of what might be a life-saving measure.

In view of the magnitude which these recurrent appeals are beginning to assume, a grave responsibility rests upon those newspapers which, with the greatest sincerity and in the utmost good faith, initiate these campaigns. The proposal to launch a public appeal of this kind should, in the interests of the public itself, come under review by a totally disinterested body before the appeals are made. The decision to send a patient overseas is undoubtedly a clinical one. Such an arrangement can best succeed if those South African medical practitioners, completely *au fait* with the circumstances of each individual case, can be put into communication with the overseas physician or surgeon who is being approached. Unless such precautions are taken, cases unsuitable for treatment may be sent on fruitless voyages elsewhere with the subsequent waste of money obtained by public subscription.

To this end it seems desirable that a medical committee should be established to advise and guide newspapers in these matters. We feel sure that if such an approach is made by any newspaper faced with a request to open a campaign to send a patient overseas, the Medical Association will be only too glad to place

king van die betrokke partye te stel. Op hierdie wyse is dit moontlik om te verseker dat beroepe op die publiek nie sonder genoegsame rede gedoen word nie.

Elders in hierdie uitgawe van die *Tydskrif* vestig 'n korrespondent die aandag onder andere op twee gevalle waaraan die leke-pers te dramatiese publisiteit verleen het. Indien die feite is soos verklaar word (en daar bestaan gene rede om te dink dat dit nie die geval is nie), toon hierdie twee gevalle op sprekende wyse dat daar 'n behoefte aan 'n komitee van geneeskundige skeidsregters bestaan om nuusblaaie en die publiek in hierdie sake te lei.

Daar word gehoop dat hierdie belangrike besluite nie meer na goeddunke deur leke geneem sal word nie wat, sonder dat dit hul skuld is, nie in staat is om die toedrag van sake in te sien nie. Dit is in die openbare belang dat daar noue samewerking tussen die dagbladpers en die mediese beroep in verband met hierdie sake is en omstandighede is van so 'n aard dat ons kollegas nie daarmee behulpsaam kan wees tensy hulle om hulp versoek word nie.

Soos deur ons korrespondent aangedui, sal dit die publiek tot voordeel strek om die goeie voorbeeld van Suid-Rhodesië te volg waar sulke raadpleging 'n gewone verskynsel is.

the services of its most skilled and experienced members at the disposal of the parties concerned, without fee or reward. In this way it is possible to ensure that public appeals are not made without sufficient cause.

Elsewhere in this issue of the *Journal* a correspondent draws attention, *inter alia*, to two cases which have recently been dramatized in the lay press. If the facts are as stated (and there is no reason to think that they are otherwise), then these two cases demonstrate very strikingly the need for a committee of medical referees to guide newspapers and the public in these matters.

It is to be hoped that these important decisions will no longer be made arbitrarily by laymen unable, through no fault of their own, to assess the situation. It is in the public interest that there should be close co-operation between the daily press and the medical profession in these matters and the situation is such that our colleagues cannot assist in these things unless they are asked to do so.

As pointed out by our correspondent, the public would do well to emulate the very good example set in Southern Rhodesia, where such consultation is the normal course of events.

HAEMOPTYSIS IN MITRAL STENOSIS*

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The symptom of haemoptysis in mitral stenosis has received relatively little attention in the literature, despite the fact that mitral stenosis is one of the commonest of all causes of haemoptysis and is possibly, in some parts of the world, the most common cause.

In general practice among Europeans in Johannesburg, the writer has found this to be the most common cause of pulmonary haemorrhage of more than a slight degree. Because of the general lack of knowledge concerning the incidence, effects, prognosis and treatment of haemoptysis in mitral stenosis, the writer has undertaken a study of this condition as it occurs on the Witwatersrand.

One hundred and fifty cases from the Johannesburg Hospital records were analyzed. Forty-three cases were taken from the Non-European Hospital records for the years 1944 to 1946 and 107 cases from the European side for the years 1940 to 1946. As far as possible the cases were unselected and were for consecutive admissions. In each case a final diagnosis of mitral stenosis, with or without other valvular lesions, was arrived at. This diagnosis was justified by physical signs, as well as in most cases by radiological, electrocardiographic or autopsy reports. The typical apical diastolic murmur was present in every case; cases in which the murmur was doubtful or speculative were excluded. No case in which a diagnosis of 'pure' mitral incompetence, as opposed to mitral stenosis, was made, was included.

The European and non-European cases are discussed separately and then the two groups are compared, and conclusions drawn. Although the total number of cases is small, it nevertheless provides a basis of comparison. The results appear to agree fairly well with the finding of other workers.

1. NON-EUROPEAN CASES

Of these 43 cases 39 were Bantu, and four were described as 'coloured'.

The incidence of haemoptysis of all degrees was 14 cases out of a total 43 (32.6%), while 29 cases (67.4%) had no history of haemoptysis at any stage.

Two of the haemoptysis cases, and six of the 29 non-haemoptysis cases, had associated aortic incompetence, while two other cases in the latter group also had evidence of associated mitral incompetence.

Of the 14 cases with haemoptysis, four were admitted as cases of 'haemoptysis for investigation'. No cardiac lesion was suspected before admission. These four cases appear to be significant in that they comprise 9.3% of the total number of cases of mitral stenosis. In these four cases the haemoptysis was moderate to large (2 oz. or more) and all four required morphine

* Taken in part from a thesis accepted in partial fulfilment of the requirements for the Degree of Doctor of Medicine by the University of the Witwatersrand.

as emergency treatment. All four cases gave a history of dyspnoea on exertion, although one continued to play football until the onset of haemoptysis. Three cases showed no other signs of congestive failure, except that in two 'scattered râles were noted at the lung bases'. One case had moderate engorgement of the neck veins, enlarged liver and slight oedema of the legs. One case had an associated aortic incompetence, but the others only had an obvious mitral stenosis.

These four cases are included among a total of seven cases, who at some time or other had a frank haemoptysis of over 2 oz. Thus, of the total 43 cases, seven (16.3%) had a history of frank haemoptysis.

Seven other cases gave a history of having had blood-stained sputum on one or more occasions, making a total of 14 cases with some degree of haemoptysis. The seven cases with streaked sputum all showed some of the accepted signs of congestive failure such as veins in the neck, large liver or oedema of the legs. The total incidence of haemoptysis in this group was thus 32.6%.

The age incidence was interesting in that all the frank haemoptyses occurred between the ages of 15 and 30 years, and five of the seven with blood streaking occurred in this period. The remaining two of the 'streaked' group occurred in the 40 to 49 year age group. Thus 85.8% of the haemoptysis cases occurred under the age of 30 years, while seven of the 29 cases without haemoptysis lived beyond 30 years, and 22 (76%) were under the age of 30. The latter figure includes seven cases under the age of 15 years.

The sex incidence of the haemoptysis cases was equal, while females predominated slightly in the total number of cases in this group.

In no cases did the records clearly indicate the cause of the bleeding, such as infarction, but in one case with pyrexia, the radiologist reported irregular shadows at the left base and suggested the diagnosis of pneumonitis.

2. EUROPEAN CASES

This group consisted of 107 cases taken from the Johannesburg Hospital records for the years 1940 to 1946.

This hospital only takes patients from 14 years onward, but as haemoptysis in mitral stenosis is infrequent before the age of 14 years, this is not an important difference for comparative purposes.

Of the 107 cases, 24 (22.4%) had a history of frank haemoptysis on at least one occasion. Fifteen cases (14%) of the total group gave a history of occasional blood-streaking of the sputum. Thus the total incidence of haemoptysis in this group was 39 out of 107 cases (36.5%).

Thirty-six of the 39 haemoptysis cases only had a single mitral valve lesion, diagnosed in each case as mitral stenosis, while three had an associated aortic regurgitation, compared with 10 cases with the double lesion among the 68 cases without haemoptysis.

Three of the haemoptysis cases had clinical signs and radiographs suggestive of pulmonary infarcts, while one had clinical and radiographic evidence of left-sided lobar pneumonia. Two of the cases with blood-streaked sputum had, in addition to mitral stenosis, a diagnosis of chronic bronchitis. These conditions presumably played some part in the causation of the haemoptysis.

Ten cases (9.3%) of the entire group were admitted with haemoptysis as the major or presenting symptom.

Of the 24 cases with frank haemoptysis, nine had obvious signs of congestive failure, while a similar number had no obvious signs of congestive failure. Six only had râles or moist sounds at the bases of the lungs. All 24 had a history of dyspnoea on exertion.

Ten of the 15 cases with blood-streaked sputum had obvious signs of congestive failure, while three had only râles or moist sounds at the bases and two had no obvious signs of failure. All were dyspnoeic on exertion.

The age incidence of the haemoptysis cases was predominantly below 40 years. Twenty-three of the 24 frank haemoptyses occurred below this age, i.e. 95.8% of the frank haemoptyses. Thirteen of the 15 cases with blood-streaked sputum (87%) occurred below this age. Of the 68 cases without haemoptysis, however, 53 cases (78%) were under the age of 40 while 15 (22%) were over the age of 40 years.

The sex incidence in the haemoptysis cases was approximately equal (18 males and 21 females), while in those without haemoptysis, the figures were 30 males and 38 females.

3. COMPARISON OF EUROPEAN AND NON-EUROPEAN GROUPS AND CONCLUSIONS

While there are only 43 non-European cases, compared with 107 European cases, several comparable trends are noted in both groups. The total incidence of all degrees of haemoptysis in the non-European cases was 32.6%, compared with 36.5% in the European cases. In view of the small number of cases involved, there does not appear to be any significant difference.

The incidence of frank haemoptysis was 16.3% in the non-European group and 22.4% in the European group, whereas the incidence of blood-streaked sputum was not significantly different in both series (16.3% non-European and 14% European). We may thus conclude that approximately one out of five or one out of six mitral stenosis cases will suffer from frank haemoptysis.

The age incidence revealed a rather interesting and possibly significant phenomenon, in that in both groups the age incidence of the haemoptysis cases was lower than in the non-haemoptysis cases. This applied particularly to the frank haemoptysis cases. In the non-European group, all seven cases (100%) were under the age of 30 years, whereas only 76% of the non-haemoptysis cases were under this age. In the European group 95.8% of the frank haemoptysis occurred below the age of 40 years, compared with 78% of the non-haemoptysis cases. There was a similar but less marked trend among the blood-streaked sputum cases. While it is difficult to account for the earlier age predominance among the Bantu, it appears probable that this may be accounted for by a generally lower expectation of life in rheumatic valvular disease in the Bantu. This point, however, requires further investigation.

The generally lower age incidence of the haemoptysis cases in both groups suggests to the writer that those cases exhibiting haemoptysis are more liable to succumb to their disease at an earlier age than those cases which never experience this symptom. It is otherwise difficult to account for the fact that the majority of the cases living into middle age do not give a history of haemoptysis. It may be argued that after a severe haemoptysis the heart condition improves and it is no longer necessary for these cases to be admitted to hospital, thus accounting for the fact that most of the cases in hospital over the age of 40 years have never experienced an haemoptysis, but as it is the general experience that mitral stenosis is a progressive condition in its effect on cardiac function, this argument appears to be untenable. The impression that haemoptysis patients succumb earlier may, however, be erroneous, but is given support by the bad prognostic significance of haemoptysis in mitral stenosis found by other writers, and discussed later in a review of the literature.

The sex incidence does not appear to be worthy of note, although it may be of interest that in both groups females predominate in the non-haemoptysis cases.

It is possible to conclude from a study of both groups that, in mitral stenosis, frank haemoptysis can occur in the absence of obvious signs of congestive failure. This happened in three out of seven non-European and in nine of the 24 European cases. On the other hand, the great majority of cases exhibiting blood-streaked sputum in both races were in congestive failure.

It is of some interest that in both groups, an identical percentage of cases (9.3%) was admitted to hospital with haemoptysis as the major or presenting symptom. We may thus conclude that in about 10% of mitral stenosis cases, moderate or severe haemoptysis may be the first sign serving to draw attention to the cardiac lesion, and may occur before the other signs of failure, except for exertional dyspnoea.

It also appears from these cases that haemoptysis due to mitral stenosis may occur even in the presence of an associated aortic regurgitation.

Finally, bearing in mind the common occurrence of rheumatic heart disease in the general population and the high incidence of haemoptysis in mitral stenosis, it becomes obvious that mitral stenosis is one of the most common causes of haemoptysis.

4. REVIEW OF THE LITERATURE

Articles on mitral stenosis in textbooks and journals give little indication of the incidence and importance of haemoptysis in this condition, despite the fact that mitral stenosis probably ranks in importance with tuberculosis as a cause of frank haemoptysis. Although haemoptysis occurs in association with other cardiac lesions, it is not nearly as frequent or severe as in mitral stenosis.[1] Some forms of valvular disease, including congenital heart disease, predispose to tuberculosis with resulting haemoptysis, unlike mitral stenosis which is rarely associated with tuberculosis, while others have haemorrhage due to pulmonary congestion or infarction.[1, 2]

There is a considerable variation in the incidence of haemoptysis given by several writers. Ginsberg[3] gives the incidence as 20% without mentioning the degree. Wolff and Levine[4] encountered 50 cases of frank haemoptysis in 520 cases of mitral stenosis (an incidence of 9.5%), while Hay and Hunt[5] give the incidence as 23%. Vinson[6] found 18 cases of haemoptysis of all degrees among 100 cases of mitral stenosis; only eight of his cases were frank haemoptyses. Other writers give the incidence as being as low as 6%.[7] In the Johannesburg cases, the incidence of frank haemoptysis appears to be higher than that generally found overseas, being 16.3% in the non-European group and 22.4% in the European group.

Wolff and Levine[4] found the average age at onset of the haemoptysis to be 33.4 years, the youngest being 14 years and the oldest 54 years. Only five of their 50 patients survived five years after the initial haemoptysis and we are thus entitled to presume that the average age at death in their cases was under 40 years. Weiss[8] states that haemoptysis occurs chiefly in young and middle-aged persons. Ferguson *et al.*[9] in a study of four cases of haemoptysis in mitral stenosis, found bleeding to have occurred in their youngest patient of 16 years and the oldest of 57 years, the other two patients being 33 years of age. They concluded that bleeding shows no age relationship. The insignificant number of their cases, however, would seem to preclude the formation of any conclusions in this respect. It appears from the limited literature available that haemoptysis is uncommon before the age of 14 years and is most common between the ages of 20 to 40 years.

Haemoptysis is not uncommonly the initial symptom to draw attention to an established mitral stenosis.[10-12] In the Johannesburg cases, although not necessarily the first symptom, it was the major or presenting symptom in 10% of cases. While dyspnoea on exertion is usually the first symptom of pulmonary engorgement, in rare instances, haemoptysis may be the only sign of pulmonary engorgement shown by X-ray to be present, and the patient may be unaware of shortness of breath.[10] One of the non-European cases in the Johannesburg group played football until the onset of haemoptysis.

While there may be no obvious precipitating factor, haemoptysis not uncommonly follows exertion, upper respiratory infections, excitement, attacks of coughing or the onset of auricular fibrillation.[4, 6, 8, 9] It may also occur during pregnancy..[4, 5] These conditions act by elevating the pulmonary blood pressure. It is of some interest that Laennec described haemoptysis in mitral stenosis in 1826 and recognized the effect of exertion.

The haemorrhage may take the form of a sudden onset of blood-streaked sputum or may be sufficient to cause the sputum to resemble pure blood, or may actually amount to a profuse haemorrhage of a litre or more.[9, 11] It often starts as streaked sputum and increases in amount. The patient may be aware of the blood squirting with each heart beat, or of its welling up in the throat, and be conscious of the warm, salty taste. In some cases the expectorated transudate may be the frothy type of red-tinged sputum such as is seen in mild pulmonary oedema. This may last several hours and then end in profuse haemorrhage of up to several hundred millilitres.[13] As a rule there are

no clots and the blood in the sputum may disappear quite suddenly. Bleeding may be abundant, although inconstant and may last for four days or more at a time. In some cases the more moderate haemorrhages relieve the engorged lungs and the patient may state that he feels better for it.[3]

Ginsberg[3] suggests that bloody sputum persisting on and off for considerable lengths of time from months to years, is a diagnostic pointer to the condition of mitral stenosis, because in tuberculosis bleeding only lasts for days or weeks. However, it is more common for haemoptysis in mitral stenosis to recur at varying intervals, sometimes several times a month, or over much longer intervals.[6, 13] The attacks may become more frequent and severe as time goes on. If they recur at regular monthly intervals, they may resemble vicarious menstruation.[13] Some patients have recurrent massive haemorrhages at long intervals, while in between attacks their only complaint is dyspnoea on exertion.[10]

While the foregoing remarks give a general description of the type of haemoptysis that occurs, the associated symptoms and signs vary considerably. Very often there are no other signs of congestive failure and the patient is often not aware that he has a heart lesion. As a rule, haemoptysis occurs in ambulatory young or middle-aged persons, some of whom give a history of having had rheumatic fever many years before.[8, 13] Most patients complain of some dyspnoea on exertion, and possibly some palpitation, but even this is not invariable. Furthermore, these attacks usually occur in most instances in patients who have not previously suffered from attacks of congestive heart failure with enlarged liver, oedema of the legs, ascites or other signs.[13] In Wolff and Levine's 50 cases,[4] only eight patients had congestive failure before or at the time of the initial haemoptysis, and nine had hearts of normal size. In most cases the patient is afebrile at the onset of the attack.

Several different clinical types of haemoptysis in mitral stenosis have been described, but it is probable that the varying descriptions apply to different degrees of one, or at most, two types.

Oppenheimer and Schwartz[13] described the syndrome of 'paroxysmal pulmonary haemorrhages' in young adults with mitral stenosis. The syndrome is rare and they could only find three cases among 1,000 consecutive cases of mitral stenosis. While in general the attacks consist of periodically recurring seizures of haemoptysis with the general characteristics described above, they may be heralded at times by an aura with psychogenic manifestations, accompanied by a rapid pulse, tachypnoea, asthmatic breathing, pain in the back, and paroxysmal cough. The aura may last several hours before the attack sets in and usually takes the form of mental anguish, with a fear of something grave impending. Speech may be unintelligible and the sensorium clouded. Hallucinations and visual disturbances may occur and all sorts of unco-ordinated movements and contortions may appear. Because of this, malingering and hysteria are sometimes suspected. Patients may become manic and require restraint. These mental disturbances become graver with an increase in frequency and severity of the attacks. In some cases a sharp pain between the scapulae may be the first evidence of an attack. Later, it may radiate down the spine and sometimes into both groins. There is no associated tenderness. Palpitation of the heart, with tachycardia up to a rate of 170 per minute, may persist for several days after the haemoptysis, even during sleep. A paroxysmal cough with the haemoptysis is a striking feature. The breathing is rapid and difficult, soon becoming asthmatic in type. In one case, severe generalized urticaria preceded the attacks. Sweating is profuse and the patient remains afebrile. During the attack, an impaired percussion note and diminished breath sounds may appear, and be localized to one part of the chest, especially the upper half on the right side. Later, both lungs fill with bubbly râles.

Stewart[14] considers that haemoptysis occurring as a sign of 'acute heart failure' is different from "paroxysmal pulmonary haemorrhage', but to the present writer it appears to be only another variant of the same syndrome. While the general characteristics previously described apply also to this type, the aura and psychogenic manifestations and back pain do not occur, although a feeling of physical discomfort, vertigo, and respiratory difficulty may precede the attack.[8] The haemoptysis may be accompanied by a sense of 'stretching of the heart' or praecordial distress. Dyspnoea and cyanosis may be present.[8] The heart rate is rapid and there is usually a rise in temperature and leucocytosis. It may occasionally be ushered in by the occurrence of a chill. The elevation of temperature has not been adequately explained and may cause the physician to suspect pneumonia.[15] However, the temperature falls rapidly, and the heart rate slows as the haemoptysis ceases, usually within three or four days. These attacks may be precipitated by the result of a sudden strain placed on the heart by an acute upper respiratory infection. They may occur with either normal rhythm or less often with auricular fibrillation.[15, 16] During the period of haemoptysis there may be a few scattered râles at the lung bases, unlike the diffuse distribution of râles in pulmonary oedema. In rare instances haemoptysis may occur without dyspnoea or any other sign of pulmonary congestion.[10] Wolff and Levine[4] reported cyanosis, wheezing, acute pulmonary oedema, weakness, faintness and collapse as associated signs in some cases. The above types constitute forms of what is known as 'pulmonary apoplexy'.

To the present writer, haemoptysis due to acute heart failure represents the most common form of haemoptysis in mitral stenosis, although some writers consider pulmonary infarction to be the most frequent cause of haemoptysis in this condition.[4] Wolff and Levine[4] found 23 cases of infarction in their 50 haemoptysis cases. Pulmonary infarction is the most likely cause of haemoptysis in the presence of congestive failure and is unlikely to occur if the patient has no cardiac enlargement, according to these and other writers.[4, 8] Typically, infarction is of sudden onset, with chest pain, sometimes substernal, collapse followed by pyrexia, the presence of a pleural friction rub and, within 24 hours, expectoration of a small

amount of blood, possibly physical signs of consolidation and radiological evidence of either recent infarction or scars from old infarcts.[14, 15] As a rule, only a small quantity of blood is expectorated.[15] One form of infarction, in mitral stenosis with congestive failure, consists merely of a sudden severe attack of haemoptysis, with or without ensuing pain in the chest. There may be a little evidence of consolidation, but severe pulmonary oedema may ensue. It is usually the deeply seated infarction which produces brisk haemoptysis without physical signs.[1]

In very occasional cases it is possible that active rheumatic arteritis of the pulmonary vessels may be responsible for haemoptysis.[4] Libman[17] believes that haemoptysis in active rheumatic fever is analogous to the more common epistaxis. The process leading to bleeding from the diseased vessels is obscure.

Pulmonary oedema may also occur in mitral stenosis and may be responsible for haemoptysis of the characteristic pink frothy type. Cases in which 'pulmonary apoplexy' and pulmonary oedema occur at different times are not uncommon. The writer will report such a case later in this paper.

In some cases the haemoptysis may be unrelated to the mitral stenosis and may be a result of a lung abscess, bronchiectasis, lung tumour or even the rarely associated condition of pulmonary tuberculosis. Bronchitis brought on by passive congestion may also cause haemoptysis.

The diagnosis of haemoptysis due to mitral stenosis should not be difficult. However, the typical diastolic murmur may vary. At times it is clearly heard; at other times it is only brought out by exercise or by the patient's lying on the left side. There are sometimes doubtful signs suggesting tuberculosis at the lung apices; thus careful examination of the heart is necessary in every case of haemoptysis.[12, 18] Many patients with mitral stenosis and haemoptysis have erroneously found their way to tuberculosis clinics.[19] On account of pyrexia, dyspnoea, and blood in the sputum, pneumonia is often diagnosed, and chemotherapy instituted.[15] The writer remembers a case in which he treated an episode in this manner, but subsequent repeated attacks showed the true nature of this condition. Evidence of consolidation and friction rub due to infarction may increase the likeness to pneumonia. Haemoptysis in the presence of aortic regurgitation suggests that an apical presystolic murmur is due to mitral stenosis and is not an 'Austin Flint' murmur.[4]

In cases of doubt about the pulmonary or cardiac origin of haemoptysis, examination of the sputum may be most helpful. In mitral stenosis, 'heart failure cells' are seen in the sputum, whereas in purely pulmonary conditions, they are absent. However, in severe haemoptysis due to mitral stenosis, the expectorated material may only show red cells and fibrin.[13] On occasion heart failure cells in the sputum may be the only sign of pulmonary congestion.[13]

Radiography is of limited use, but may show the typical mitral configuration of the heart, as well as pulmonary congestion. A barium meal may show the characteristic indentation of the oesophagus due to the enlarged left auricle. The hilar shadows are usually increased in size and density and the lung fields may have a mottled appearance resembling miliary tuberculosis.[13] This mottled appearance may also be present in cases without haemoptysis and is thus not characteristic of the latter. Some cases may show no abnormalities of the lungs on radiography. Pulmonary congestion may produce diffuse shadows extending from the hilum to the periphery, resembling pneumonia, or shadows restricted to one area or lobe suggesting some lung pathology.[13] Infarcts may form typical wedge-shaped or triangular shadows or cause dense shadows resembling tuberculosis.[18] These shadows, however, usually disappear rapidly, unlike shadows due to tuberculosis.

(To be continued)

RECENT ADVANCES IN VENEREOLOGY*

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The advances in venereology in the last 50 years have been almost exclusively in the line of therapy, the descriptions of gonorrhoea and syphilis having been completed by the end of the nineteenth century. The major therapeutic advances have been the application of the arsphenamines and arsenoxides in syphilis, the sulphonamides in gonorrhoea and the antibiotics in both diseases.

Other important events have included the use of pyretotherapy as an adjuvant to other methods of treatment, the discovery of B.A.L., a substance effective in arsenical and other metal intoxications, and the demonstration that the so-called 'post-arsphenamine jaundice' is caused by an infective agent.

There has been a growing interest in the broader field of the sociological and psychological aspects of the venereal diseases with such developments as contact tracing and the use of publicity on a national scale to increase awareness of the importance of these diseases.

* This article is based on the author's Nathaniel Bishop Harman Prize Essay (British Medical Association, 1948). It was read at the Medical Congress held at Cape Town in September 1949.

GONORRHOEA

The first event of real importance in the treatment of gonorrhoea was the use of irrigation, popularised by

Jules Janet in the 1890's. Before this time gonorrhea was either virtually untreated with balsamics, hexamine, etc., or it was maltreated by a variety of instillations and barbarous instruments. The untreated were fortunate. It would appear that complications of gonorrhoea occur in direct proportion to the amount of meddling with urethral instruments in the acute phase. Irrigation in expert hands reduced the time of treatment enormously, from months to weeks; and the competence of a venereologist in those days could be judged by the number of his patients who developed complications after he had begun to treat them.

Sulphonamides. The use of the sulphonamides from 1935 onwards was a far greater advance, but part of their success ought to be credited to the fact that they further reduced the necessity, or better the indications, for using mechanical aids to treatment. A comparison of the literature of the last century and this shows how the incidence of stricture, the most important complication of gonorrhoea, has declined.

At first the sulphonamides were used in doses we now know to be inadequate; e.g., 1 gm. of sulphanilamide or sulphapyridine thrice daily for a week or longer. Some workers delayed sulphonamide treatment, to enhance the effect, until they considered a state of immunity had been established. Sulphonamide resistance was commonly induced and toxic effects were often seen. Before sulphonamide resistance was recognized as a complication treatment was often continued, without success, for weeks or even months.

It was eventually found that the best results were attained with the sulphonamides with doses of 1 gm. five or six times daily for four or five days. The later sulphonamides, sulphathiazole and sulphadiazine were the most successful and much better tolerated than the earlier types.

Sulphonamide resistance, soon the most important complication, became commoner as time went on. In 1942 about 80% of my male patients (British Army in England) could be discharged symptom-free within a week; in 1944 only about 50%. The situation in the Mediterranean Area was even worse. The cause of this resistance has not been determined. The factor may lie in the host or in the parasite, probably the former. I was never able to demonstrate any significant correlation between sulphonamide resistant gonorrhoea in men and in their consorts. It has been suggested that the taking of small prophylactic doses of sulphonamides by women in North Africa may have produced a virulent strain of gonococcus. Perhaps the indiscriminate use of sulphonamides for practically every minor infection caused some change in the host.

Genuine sulphonamide resistance (focal infections being excluded) usually covered the sulphonamide range and before the advent of penicillin was often extremely difficult to overcome. The best methods then available were by pyretotherapy, T.A.B. vaccine intravenously, or hyperthermy in the most stubborn cases.

Penicillin. First generally used in 1944 penicillin was soon established as the most effective remedy for gonorrhoea yet discovered. It is equally effective in uncomplicated and sulphonamide resistant gonorrhoea and its value is unaffected by the duration of the disease. In adequate dosage penicillin will rapidly eliminate the gonococcus in over 90% of such cases. Rapid relief of symptoms is not quite so often achieved as other co-existing organisms are not always sensitive to penicillin.

The minimum effective dose of commercial penicillin in aqueous solution was found to be 100,000 units given in divided doses (three to ten) over eight to twelve hours. Single doses of this amount produced cure in only 36% of cases (personal experiment) and two doses of 50,000 units with an eight-hour interval were little better.

The aqueous solution is little used now as excellent results can be obtained with a single dose of 300,000 units penicillin in a retarding medium such as arachis oil-beeswax or procaine. Gonorrhoea can be cured by orally administered penicillin provided the cases are properly regulated but this method cannot be recommended for general use because of its obvious drawbacks.

Uncomplicated relapse of gonorrhoea can usually be cured by more penicillin at the same or higher dosage. True penicillin resistance is very rare, and in the few cases when repeated failure occurs, streptomycin can be used. A single dose of 0.5 gm. may suffice but it is better to give this dose twice a day for two days.

Many patients respond satisfactorily to penicillin alone, but adjuvent treatment is necessary when secondary infections co-exist in either sex. Penicillin and the sulphonamides are not synergistic in action, but the association of the two remedies may reduce treatment time in some cases where gonorrhoea is complicated by secondary infection.

Penicillin is not so spectacularly successful in the treatment of the complications of gonorrhoea as it is in the acute disease. In the presence of closed foci of infection it often fails entirely and penicillin treatment should be delayed, in such cases, until drainage has been established. Prolonged heavy dosage, of the order used in syphilis, is necessary in such major complications as salpingitis and prostatitis and even so, it is sometimes necessary to resort to surgery. In the treatment of gonorrhoeal rhumatism penicillin does not, in my opinion, compare with fever induced by the hypertherm.

The use of penicillin in gonorrhoea has vastly reduced the treatment time in the acute disease, but it does not absolve the user from following up his cases as carefully as in the past or from using the necessary adjuvant treatment in the face of complications.

The Masking of Syphilis. The course of syphilis contracted at the same time as gonorrhoea is influenced by the dosage of penicillin used for the latter. In my own cases treated with 100,000 units penicillin the incubation period of coincidental syphilis averaged fifty days; and in cases treated with 300,000 units the first signs appeared between 43 and 91 days. In no cases were the clinical signs altered in appearance and *Sp. pallida* was always easily demonstrated. Although signs of syphilis usually appear within three months, the period of follow-up should now be extended. The Americans generally make the final check and serum test for syphilis at four months, but a six month follow-up is usual in Britain.

When more than 600,000 units are employed for

relapse or complications I think it wisest to prolong treatment so that enough is given to 'cure' a possible coincidental syphilis. When gonorrhoea is contracted late in pregnancy it is again advisable to cover this possibility by lavish dosage.

When gonorrhoea is accompanied by genital ulceration suspected of being due to syphilis, treatment should be by sulphonamides or streptomycin which will not interfere with subsequent diagnostic tests.

SYPHILIS

The first major advance in the treatment of syphilis came with the use of 606 in 1909. Ehrlich believed at first that one dose would cure all cases, but his hopes were not fulfilled and the treatment had to be increased. It was soon found that results were improved by using mercury at the same time. The most effective treatment schedules were evolved after 1920 when Levaditi showed the superiority of bismuth over mercury.

Although 606 was the most efficient antisyphilis remedy it was largely discarded because of its dangers in favour of neoarsphenamine and, later, the arsenoxides. The arsenicals have recently been criticised and even abandoned by some French authorities but for most they long remained the keystone of treatment. The arsenoxides are favoured in the U.S.A., neoarsphenamine in Europe. Both have their points; neoarsphenamine does not have to be administered so frequently but the arsenoxides, in proper dosage, are just as effective and much less toxic.

The old standard arsenic-bismuth schedules called for treatment lasting for a minimum period of about a year in early syphilis. When the treatment was completed results were excellent but the long period made default common. Even in the British Army, under discipline, only 50% of patients attended satisfactorily in the most important first six months. The fate of the untreated and the treated syphilitic can be read in the studies of Bruusgaard, Rosahn and Padget.

Rapid Arsenotherapy. From earliest times the goal in syphilis has always been a rapidly effective treatment. The first real step towards this came in 1933 when patients with early syphilis were treated by a slow continuous intravenous drip method in five days. Neoarsphenamine (4-5 gm.) was used at first, Mapharsen (1,200-2,400 mg.) soon being substituted because of grave toxic effects. This method was further modified and improved by giving the Mapharsen by multiple injections, but the risks remained too high for its general use. Attempts to reduce the amount of arsenic required for cure by using artificial fever as an adjuvant were spectacular but not much safer. The best of these rapid methods achieved over 80% of cures.

The key to rapid arsenotherapy was given by the experimental work of Eagle and Hogan which showed that, within fairly broad limits, the curative dose of Mapharsen by any schedule was independent of the time in which it was given. Multiple injections were better than continuous intravenous drip methods. The shorter the treatment period, the greater is the risk of toxic effects.

The total dose of Mapharsen required to cure early syphilis is between 20 and 30 mg. per kilo body weight, i.e., 1,200 to 1,800 mg. for a 60 kg. man. The lower figure would be used for an ultra-rapid treatment (5-20 days), the higher for a schedule of 10-12 weeks. As with long schedules the addition of bismuth improves results. Two methods which became popular and gave excellent results were the '20 day' method (total dose of arsenoxide given in 20 divided doses) and the 'twelve week' in which 0.06 gm. Mapharsen was given thrice weekly. The incidence of toxic effects with these methods was lower than expected from theoretical considerations.

Penicillin. Although penicillin cures every case of animal syphilis it is not so successful in the human variety. It is a very powerful spirochaeticidal agent and gives excellent symptomatic results at all stages of syphilis, but it is most successful against the disease in the foetus and young infant. In acquired syphilis the earlier treatment is begun, the better are the results.

The minimum effective dose for early syphilis was soon found to be 2,400,000 units given over 7½-15 days. The cure rate at this dosage is about 75%, poor in comparison with other methods but achieved without risk. From a statistical survey Perdrup deduces that increasing the dose above 2,400,000 units in seven and a half days will not improve results. Increased dosage was required after 1945 to cover variations in quality of commercial penicillin, but stable products of known constitution are now available. Penicillin in oil-wax suspension or procaine give results as good as those achieved with the aqueous solution. Penicillin is always used by the intramuscular route in syphilis, intravenous administration by injection or slow infusion having so far failed to equal this method.

The solution of the problem of enhancing results may lie either in increasing the time of penicillin treatment (continuous or intermittent) or in giving combined treatment with other remedies. A genuine synergistic action between penicillin and arsenic has been demonstrated, but not between penicillin and bismuth.

Dr. F. R. Selbie's work on animal syphilis suggested that penicillin combined with not less than half the quantity of arsenic normally used would give the best results, and I have used this principle in treating patients both with rapid (ten day) and long schedules (three to six months). The results have been much better than with penicillin alone.

It is to be hoped that a more effective method using penicillin alone will be discovered, but for routine treatment at present combined treatment, in spite of added risk, is the best for a population which cannot be relied upon to report relapse at once.

Good symptomatic results are seen in most cases of late osseo-cutaneous and hepatic syphilis; but the results in cardiovascular and latent syphilis are still uncertain because of the long follow-up necessary for assessment. In neurosyphilis, especially the meningitic and meningo-vascular varieties, results are often good. Improvement in the cerebro-spinal fluid changes is often rapid and more marked than the symptomatic changes. Neurosyphilis seems to require larger dosage than early syphilis; and intrathecal and subdural penicillin

are unnecessary. Penicillin has not ousted pyretotherapy and the two can often be combined to advantage.

Much further study is necessary before it can be assumed that penicillin is lastingly effective in late syphilis, and adjuvant methods are certainly indicated in all cases. It should be noted that penicillin, in doses insufficient to cure, can precipitate progression of the disease at any state.

Only against syphilis in the foetus and young infant does penicillin alone give spectacular results. In syphilis during pregnancy, independent of the duration, penicillin protects about 98% of infants although its effect on the mother is no better than at any other time. Against late congenital syphilis its effects are equivocal and it is best to use combined treatment.

Hepatitis and Syphilis. One of the major epidemics of the last war was that of infective hepatitis. At the same time the incidence of hepatitis, 'post-arsphenamine jaundice', in syphilitics treated with intravenous arsenicals of all types and on all schedules also increased. The incidence of hepatitis in syphilitics was much higher than that of infective hepatitis in the ordinary population. In one Army Command in England for the year May 1943-April 1944 the rates were as follows:

Infective hepatitis	..	1.57 per 1,000 troops.
Post-arsphenamine jaundice		0.21 per 1,000 troops.
	or	47.0 per 1,000 syphilitics.

Hepatitis and jaundice can occur at all stages of syphilis, untreated or under treatment, and I have proposed the following classification:

Untreated Syphilis:

Congenital:

(*a*) Pericellular fibrosis in infants.
(*b*) Gummatous hepatitis.

Acquired:

(*a*) Being hepatitis of early syphilis (icterus syphiliticus praecox).
(*b*) Early hepato-recurrence.
(*c*) Acute liver atrophy of early syphilis.
(*d*) Gummatous Hepatitis:
(1) Local gumma or gummata.
(2) Diffuse gummatosis.
(3) Chronic syphilitic hepatitis (or cirrhosis).

Treatment Complications.

(*a*) Hepatitis from induced fever (malaria, hyperthermy, etc).

(*b*) Early, ninth day, hepatitis (with toxico-dermal reaction).

(*c*) Late, 100th day, hepatitis or 'post-arsphenamine jaundice', varying from a subclinical variety to acute liver atrophy.

The type which reached epidemic proportions was that variety generally called 'post-arsphenamine jaundice', and at one time 50% or more of all patients treated in certain hospitals in England were affected. The onset of symptoms occurred between 80 and 120 days after treatment began either initially at, or after transfer to, such a hospital.

It had generally been assumed that this type of hepatitis was caused by arsenic but although increasing the amount of arsenic in a schedule could increase the incidence of jaundice, reducing the arsenic (in a British Army experiment) did not have the opposite effect. Milian's theory of hepato-recurrence had few supporters although Milian himself was still convinced of its truth to his dying day. Other factors which could be considered were infection and dietary deficiency, probably protein; as it had been noted that hepatis was commonest in syphilitics at times of economic stress. It was impossible to distinguish clinically or by any pathological method (including puncture biopsy) between infective hepatitis, post-arsphenamine hepatitis and homologous serum hepatitis.

The long incubation period of post-arsphenamine jaundice, about 100 days, suggested that an infective factor, probably a virus, was involved. Experiment showed that this was so, and that the infective factor was transmitted from patient to patient by way of imperfectly sterilized syringes used for intravenous injections. By insuring proper sterilization by boiling or autoclaving the incidence could be reduced almost to vanishing point. The infective factor was not the same as that involved in ordinary infective hepatitis whose incubation period is only about 30 days; and an attack of 'post-arsphenamine jaundice' (or of homologous serum jaundice) conferred no immunity against infective hepatitis. The infective factor was shown by experiment to be capable of human passage.

On the aspect of protein deficiency as a factor it was shown that sulphydryl amino-acids, notably methionine, could protect, to a certain extent, against liver damage during arsenical treatment. The relative unimportance of dietary deficiency is shown by the fact that the incidence of all forms of hepatitis was negligible in occupied France although the diet there was much lower in protein than in Great Britain at the same time.

B.A.L. British Anti-Lewisite is a compound used for the treatment of those complications of anti-syphilitic treatment which are due to arsenical intoxication. It acts by forming a stable thio-arsenite which is rapidly excreted in the urine. Much vaunted for the treatment of arsenical dermatitis it is really effective only if used in the earliest stages of erythema. It should be used as soon as possible in cases of dermatitis, encephalopathy and blood dyscrasia, and it should be tried in cases of toxic effects from tryparsamide. For accidental overdosage with arsenicals it is of enormous value.

GRANULOMA INGUINALE

There is now considerable doubt whether this disease should be classified as venereal in origin in spite of the predominantly genital location of its lesions. Treatment has, in the past, been unsatisfactory, but streptomycin has now been shown to be a specific. The dosage generally advised has been 1 gm. streptomycin daily, in divided doses, for as long as is necessary to produce complete healing; in some cases a month or more. In a recent experiment 19 chronic cases (lesions present from 15 months to 21 years) were given a routine course of 0.5 gm. streptomycin every three hours to a total of 20 gm. in five days. Healing was rapid and there were no recurrence in a follow-up lasting from six to 15 months.

Sulphonamides and penicillin may be useful for secondary infections and antimony compounds are still indicated in resistant cases.

LYMPHOGRANULOMA INGUINALE

The sulphonamides have greatly improved the prognosis in lymphogranuloma inguinale. Sulphathiazole or sulphadiazine can be used in doses of 1 gm. every three hours for the first three days, followed by ½ gm. every three hours for a further week or ten days. In stubborn cases a second course can be given after an interval of ten to 14 days; and the effect may be enhanced by a few sessions of artificial fever produced by T.A.B. vaccine. Evidence that penicillin may be of specific value is not convincing.

CHANCROID

The sulphonamides have been shown to have a specific effect in chancroid. Sulphathiazole can be used in doses of 1 gm. five times daily for five to seven days. Streptomycin is also a specific and the dosage recommended is 1 gm. daily, in divided doses every four hours, until the lesions are healed.

CONDYLOMATA ACUMINATA

A simple treatment for genital warts is now available in podophyllum resin applied as a 25% suspension in water or liquid paraffin. This method is most effective for small discrete lesions which often disappear after one or two applications (at an interval of five to seven days). Podophyllum has also been used in the treatment of papillomata of the bladder.

SOCIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF VENEREAL DISEASES

The broader sociological and psychological aspects of venereal diseases have, until recently, been little considered. The controversy over the medical control of prostitution and the psychological and sociological investigations of this subject are too well known to bear reiteration. These studies have indeed been, in a way, overdone as the prostitute is not the most important source of venereal diseases.

In a wider field the outstanding features have been the use of national publicity campaigns by radio, newspapers, and films in the U.S.A. before, and in Britain during the war; the trial of compulsory treatment of habitual spreaders of disease in Britain; and the control system in operation in Sweden.

Special mention must be made of the individual contact tracing system with particular reference to the excellent results achieved by Dr. Paul Padget's American Army team in Europe during the war. This method deserves much wider development.

The psychological factors involved in the average patient who contracts venereal disease have been studied by Wittkower in a group of soldiers and further investigation in this field may yet prove fruitful.

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PASSING EVENTS

POST-GRADUATE MEDICAL LECTURES

Dr. H. H. Fouracre Barns will lecture, under the auspices of the Cape Town Post-Graduate Medical Association, on 28 February and 7 March 1950, on 'Diabetes and Pregnancy' in the Physiology Lecture Theatre, Medical School, Mowbray, C.P., at 8.15 p.m. These lectures will be illustrated with lantern slides.

On 14 March 1950 Dr. Fouracre Barns will lecture on 'Stress Incontinence'. This lecture will be illustrated by a film and will also be delivered in the Physiology Lecture Theatre at 8.15 p.m.

The Secretary of the Cape Town Post-Graduate Medical Association extends an invitation to all members of the Medical Association of South Africa to be present.

* * * *

Dr. Norman Rosenzweig, M.Ch., Orth., F.R.C.S. (Edin.) will shortly be returning to Cape Town. He has been Orthopaedic Registrar at the Liverpool Royal Infirmary for the past year. Before this he was Registrar at the Orthopaedic Hospital, Stoke-on-Trent.

* * * *

Dr. E. van der Burgh, lately a Radiologist at Groote Schuur Hospital, Cape Town, has joined Drs. Montgomery, Meyer, Jacobson and van der Merwe, in their practice as Radiologists, at 81, St. George's Street, Cape Town.

NEW PREPARATIONS AND APPLIANCES

THE PHLEBAUMANOMETER

The Phlebaumanometer, like the well-known Baumonometer, is a true gravity device for taking venous pressure in large or small veins, quickly, accurately and without loss of blood. It is also unequalled for spinal pressure.

Evaluation of venous pressures by this simple, safe and accurate method is now indicated in cardiovascular conditions, e.g. peripheral circulatory collapse, oedema states, diseases of veins, congestive heart failure, evaluation of therapy, etc. This new approach, like arterial pressure, aids in the diagnosis, treatment and prognosis of many disease states.

South African Agents: Gurr Surgical Instruments (Pty.) Limited, Harley Chambers, Kruis Street, Johannesburg.

'V.D.W.' FORCEPS

AN INSTRUMENT COMBINING A CATGUT VIAL CRUSHER, CATGUT HOLDER AND SCISSORS

Originating as an idea conceived by a South African Hospital Matron, whose initials make up the name of the instrument, the 'V.D.W.' forceps, as illustrated, combines three uses: the crushing of any catgut vial, the 'grabbing' and holding of the ligature carrier and the cutting of the suturing material.

The 'V.D.W.' forceps is hand-forged of solid stainless steel. It measures overall 9 inches long and 4 inches wide in the closed position. Handles are roughened to ensure a firm grip and are shaped like a needle-holder comfortably resting in the palm of the hand. Its action is controlled by a stainless steel spring of moderate tension.

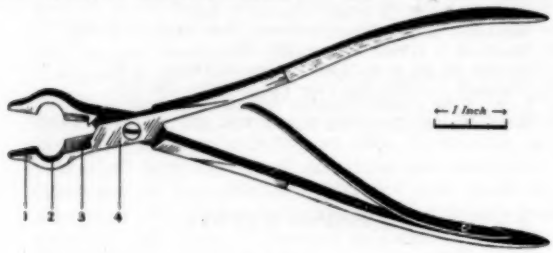

Fig I

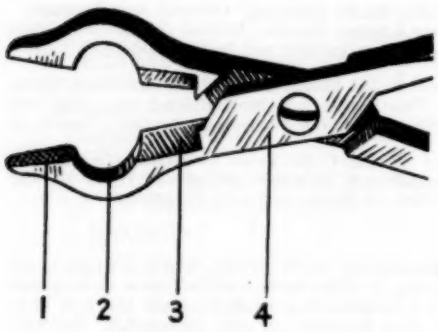

Fig II

Fig. I shows the 'V.D.W.' forceps in the half-open position, exposing crushing jaws, holding tongs and cutting edges.

Fig. II shows the working parts of the instrument:

i. The holding tongs are serrated crosswise, similar to the serrations of an artery forceps. When closed, the serrations ensure a positive grip of the catgut or ligature carrier.

ii. The crushing jaws form an almost complete circle closing around a catgut vial. They are so designed that vials of varying diameters can be crushed easily. Only a slight pressure of the hand against the handle is required.

iii. The cutting edges are 1 cm. long. Their hand-ground bevels make for easy cutting of the suturing material.

iv. The box-lock of the instrument assures absolute firmness in the joint, eliminating all 'wobble' and feeling of looseness.

The inventor of the 'V.D.W.' forceps suggests that the following procedure be followed: After sterilizing the instrument by any suitable method, crush the catgut vial over a sterile kidney dish or tray, grip the ligature carrier firmly and shake off all glass particles into the dish or tray. Get hold of the ligature with any forceps, extend to the required length and cut.

The 'V.D.W.' forceps combines the features of several separate instruments in one handy instrument. It eliminates the unsatisfactory and rather dangerous practice of 'smashing' a vial. The forceps, which was introduced for the first time at the Cape Town Medical Congress in 1949, has been tested by several Theatre Sisters and Surgeons, one of whom named the instrument significantly 'the Theatre Sister's dream'.

Supplies and further information on the 'V.D.W.' forceps are available from the sole agents and distributors in Southern Africa, Messrs. Union Medical Supplies (Pty.) Ltd., 81, Long Street, P.O. Box 3907, Cape Town; from their sub-distributors in South-West Africa, Messrs. Cloete Kruger (Pty.) Ltd., Kaiserstrasse, P.O. Box 759, Windhoek; and their agents in the Transvaal, Messrs. W. F. Brittain (Pty.), Ltd., Balmoral Bldg., President St., P.O. Box 6019, Johannesburg.

OFFICIAL ANNOUNCEMENT

FEDERAL COUNCIL

Notice is hereby given that a meeting of the Federal Council will be held at Medical House, 5, Esselen Street, Johannesburg, on 16 March 1950, at 9 a.m.

AGENDA

1. Notice convening the meeting.
2. Proxies.
3. Minutes of previous meeting (circulated).
4. Matters arising out of the minutes.
5. Financial statement by the Honorary Treasurer.
6. Report of the Executive Committee.
7. Reports of other Committees.
8. Reports deferred from the previous meeting.
9. Notices of motion transferred from the previous meeting.
10. New notices of motion.
11. Other business.

A. H. Tonkin,
Medical Secretary.

Medical House,
35 Wale Street, Cape Town.
18 January 1950.

AMPTELIKE AANKONDIGING

FEDERALE RAAD

Kennis geskied hiermee dat 'n vergadering van die Ferderale Raad gehou sal word op 16 Maart 1950, om 9 v.m., te Mediese Huis, Esselenstraat 5, Johannesburg.

AGENDA

1. Kennisgewing van vergadering.
2. Volmagte.
3. Notule van vorige vergadering (reeds uitgestuur).
4. Sake vermeld in die notule.
5. Geldelike verslag deur die Ere-Tesourier.
6. Verslag van die Uitvoerende Komitee.
7. Verslae van ander Komitees.
8. Verslae uitgestel van die vorige vergadering.
9. Kennisgewings van voorstelle oorgedra van die vorige vergadering.
10. Nuwe kennisgewings van voorstelle.
11. Ander besigheid.

A. H. Tonkin,
Mediese Sekretaris.

Mediese Huis,
Waalstraat 35, Kaapstad.
18 Januarie 1950.

REVIEWS OF BOOKS

PUBLIC HEALTH BACTERIOLOGY

Public Health Bacteriology and Parasitology. By C. G. Booker, M.D., Ch.B., D.P.H., D.T.M., D.T.H., L.R.C.P., L.R.C.S., L.R.F.P.S. (Pp. 254 + xiii. With 108 illustrations. 35s.) Johannesburg: South African Railways. 1949.

Contents: 1. Bacteriology. 2. Protozoology. 3. Helminthology. 4. Entomology. 5. Rodents.

The foreword to this book states that it is based on notes on which the health staff of the S.A.R. & H. have been trained, but one finds it difficult to visualize precisely which sort of student in the world outside the railways would benefit by it. The ordinary health inspector will find it too detailed and the D.P.H. candidate not detailed enough. Students of the advanced examinations for health inspectors may find it useful, and those taking such courses as the B.Sc. (Hygiene), but even then there are many gaps which spoil it for their requirements. What should or should not be included in a book of this sort is a matter of opinion, but while, e.g., the Genus Rhipicephalus is described in detail, no reference is made to the Wassermann reaction, not to mention its more modern modifications. Similarly, those paying 35s. for a book published in 1949 may expect to find reference to other modern developments. In the chapter on milk, e.g., the methylene blue test is described as 'rapidly replacing other bacteriological tests,' whereas in fact is is already being replaced by such procedures as the rosazurin test.

In the same chapter, one might have hoped to have found some reference to the electrolytic testing of milk. No one would deny the importance of immunology in public health bacteriology, yet the author deals with this subject in little over one and a half pages. Other shortcomings of a similar nature can easily be found. In fact the book is no more that it sets out to be, a compilation of lecture notes, and as such it can be recommended as a useful book of reference for those engaged in lecturing on public health to lay audiences.

PSYCHO-ANALYSIS

What is Psychoanalysis? By Ernest Jones, M.D. (Pp. 126. 7s. 6d.) London: George Allen & Unwin Ltd. South African Representative: Mr. Howard B. Timmins, Monarch House, 58-60 Long Street, Cape Town. 1949.

Contents: 1. Introduction. 2. Content of Psychoanalysis. 3. Applications of Psychoanalysis. 4. Conclusion. 5. Addendum (1947). 6. Selected Bibliography.

The value of this book lies in the fact that the author answers the question he poses without equivocation, quickly, concisely and, except for occasional lapses, clearly. Through this book, the tyro, lay and medical, can 'get-Freud-quick'.

Dr. Jones sticks to Freud's psychological interpretations as tenaciously as any Eddyite to Mary Baker's *Key to the Scriptures*. 'The findings of psychoanalysts,' he says, 'are either untrue or else they are of momentous impact. One thing is certain and that is that they are not half-true.' (We are reminded of Francis Bacon's famous passage: 'What is truth, asked jesting Pilate, and would not stay for an answer.') However, whether one agrees in part or in whole, or whether one disagrees entirely with psychoanalytical theories, Dr. Jones' 'dogmatic' decisiveness does not detract but enhances the book as a simple, clear-cut introduction to Freud. Psychoanalysis, he writes, denotes three things: 'A special method of medical treatment devised by Prof. Freud... A special technic for investigating the deeper layers of the mind... The province of knowledge gained by this method and in this sense it is "the science of the unconscious".'

Whilst doggedly holding to the old Oedipus complex as the central function of the whole unconscious, the author debunks the common fears that Freud threatens social ethics, and individual taste and judgment.

His reasons for the success of other clinical psychologies such as those of Jung and Adler, who abjured Freud, are interesting: 'All other methods of treatment really act, whatever their pretensions, by strengthening the superego...' whilst psychoanalysis ensures 'that the blind repression... is replaced by conscious control exercised by the ego itself'. Dr. Jones does good work in making clear for the student what Freud means by such terms as *ego, superego, id, resistance,* etc.

The author also repudiates the idea that psychoanalysis might be termed a 'philosophical theory'; for, he says, 'it has direct inferences from verifiable observations'. But, as Aristotle and Thomas Aquinas might point out, every philosophical theory *is* inferred from verifiable observations. Like the critic dissatisfied with his art, the psychoanalyst apparently indulges the fantastic dream that his work might be reduced to the firm precision of a science. However, the first essential of a science is to demonstrate its subject; but, outside that science of the sciences, metaphysics (a much-needed scrutator in modern science, including medicine) we still await a substantial definition of the psychologist's own very subject, the psyche, the mind. Maybe it is an Oedipus complex that underlies Dr. Jones' resistance to such a definition; and maybe it is the reviewers' own Oedipus complex that makes him cross when a book of this nature omits an index. The book is an excellent introduction and summary to Freudian psychoanalysis. The well-selected bibliography point broad-arrows to further reading in this field.

GREEN'S PATHOLOGY

Green's Manual of Pathology. Revised by H. W. C. Vines, M.A., M.D. (Pp. 1,200 + viii with 730 illustrations. 42s.) London: Baillière, Tindall & Cox. 17th ed. 1949.

Contents: Part I. General Pathology. 1. Health and Disease. 2. Tissue Death. 3. The Degenerations. 4. Disturbances of the Circulation. 5. Disturbances of Nutrition. 6. Errors of Internal Metabolism. 7. Inflammation. 8. Repair. 9. Immunity, Allergy and Infection. 10. Types of Infection: Bacterial Infection. 11. Types of Infection: Infection by Animal Parasites. 12. Mechanical and Physical Injuries: Extrinsic Poisons. 13. Hereditary and Congenital Disease. 14. New Growths. 15. Connective Tissue Tumours. 16. Epithelial Tumours.
Part II. Diseases of Special Tissues and Organs. 17. Diseases of Bone. 18. Diseases of Joints. 19. Diseases of the Muscles and Tendons. 20. Diseases of the Heart and Pericardium. 21. Diseases of the Bloodvessels. 22. Diseases of the Reticulo-Endothelial System. 23. The Anaemias. 24. Diseases of the Respiratory System. 25. Diseases of the Mouth and Oesophagus. 26. Diseases of the Stomach and Duodenum. 27. Diseases of the Intestines. 28. Disease of the Peritoneum. 29. Diseases of the Liver. 30. Diseases of the Gall-Bladder 31. Diseases of the Pancreas. 32. Diseases of the Ductless Glands. 33. Diseases of the Kidney. 34. Diseases of the Bladder, Prostate and Urethra. 35. Diseases of the Male Genital Tract. 36. Diseases of the Female Genital Tract. 37. Diseases of the Breast. 38. Diseases of the Nervous System. 39. Diseases of the Nervous System.

Professor Vines believes that there is no real dividing line between physiology and pathology, and starting with this principle he has produced a very readable textbook with a much broader outlook than usual. At the commencement of certain chapters a generous amount of space has been given to an account of the normal and abnormal physiology of the organ or system concerned. So one discovers a graph of a fractional test meal, a sugar tolerance curve and later 10½ pages on renal function replacing the usual few lines on the subject.

Part II on Special Pathology covers a vast field and the student will certainly find all the information he seeks. The older worker who may wish for a more concise presentation and greater detail on some common diseases will, nevertheless, find an account of many of the rarer and minor conditions usually omitted from a manual of this type.

The text is mostly up to date. Mention is made of the work of Trueta, of the relationship between rubella and congenital abnormalities, virus pneumonia, and the crush syndrome which is adequately dealt with in three pages. One notes that there is no reference to the work of Himsworth or to the role of prolonged fatty infiltration in the production of cirrhosis. Although the author feels that there are enough classifications of nephritis, one would have liked to have seen something of the London Hospital classification.

The short clinical descriptions are unsatisfactory and contain clinical irrelevancies, e.g., that of subacute endocarditis on page 507: 'Clinically the disease is of insidious onset and is often dated by the patient from a heavy cold followed by easy fatigue, dyspnœa, night sweats, anaemia and sometimes praecordial pain.' A few lines indicating the combination of a febrile illness, old rheumatic valvulitis or congenital heart disease, and splenomegaly would be more suitable.

The fine introductory chapter on 'Health and Disease' should be read by all medical students commencing their pathological studies.

Sanitary Science and Law

Aids to Sanitary Science and Law. By J. A. Struthers, M.D., M.R.C.P., D.P.H. (Pp. 380 + vi. 6s.) London: Baillière, Tindall & Cox. 4th ed. 1949.

Contents: 1. Water Supply. 2. Ventiliation, Heating and Lighting. 3. Food. 4. Sewage and Refuse Disposal. 5. Sites, Buildings, etc. 6. Climate and Meteorology. 7. Infectious Diseases and Disinfection. 8. The Health of the School Child. 9. Maternity and Child Welfare. 10 Industrial Diseases and Industrial Hygiene. 11. Tropical Diseases. 12. Parasites and Diseases due to them. 13. Vital Statistics. 14. Public Health Law and Administrations. 15. The National Health Service. 16. Useful Data for Calculations. 17. Appendix: Children Act, 1948.

One continues to be surprised at the wealth of information contained in this small volume. Over-condensation, however, may lead to such unfortunate sentences as this: 'Room disinfection may be carried out by means of SO_2 or formaldehyde, or by spraying with a disinfectant solution, e.g. D.D.T. 5% in kerosene.' As long as it is used strictly for revision, this new edition should again prove to be a welcome help to students studying for the D.P.H. and R.S.I. examinations.

CORRESPONDENCE

Public Subscriptions for Sending Patients Overseas

To the Editor: The migration of patients winging their way across the Atlantic is beginning to take on the dimensions of a national exodus. Each week the newspapers tell us of campaigns for money to finance the trips of sufferers who presumably have despaired of obtaining relief in their own country.

All this would be understandable—indeed laudable—if South Africa were a medical wilderness. Admittedly a small group of cases will benefit greatly from treatment in some of the well-known clinics of North America or the United Kingdom; and if patients with means choose to be treated in New York, London or Oslo that is their own business. But it is a different matter when appeals are made in the press to raise money (most of which has to be in dollars) with very little discrimination being exercised in the choice of patients. Children empty their savings-banks and sell their toys to send people to America who, frequently, can be served as well in their own country.

Thus a boy with bronchiectasis of both basal lobes, the lingula of the upper lobe on the left and beading on the upper lobe on the right, is very properly told that his case must be watched for extension. If, after a while there are no signs of extension, segmental resection might be undertaken. If lobectomy eventually became necessary this could be done in Cape Town or Johannesburg at least as well as in any American clinic. In spite of this, and merely on the urging of a layman, a responsible newspaper has raised funds to send him to America.

Thus, too, a woman with periodic catatonia departs for Norway amidst unprecedented ballyhoo to undergo treatment first described in 1936 and received with remarkable apathy in psychiatric clinics elsewhere. Orthopaedic cases, many of them the late results of poliomyelitis, leave South Africa where the level of orthopaedic work in the large towns is very high.

Apart altogether from the impression created in overseas clinics of the quality of South African work by this mass migration, the really serious aspects are first, that patients lose confidence in South African doctors; secondly, there is a law of diminishing returns in this business. If an appeal is launched every week it will become progressively harder to raise money and the really deserving case will suffer in the end.

Naturally we shall be told that we are jealous, small-minded and spiteful when we raise objections. In Rhodesia, where funds are available from sweepstakes, poor people are sent away for treatment which they cannot procure in Rhodesia. But they have the sense there to have a selection committee of responsible doctors who decide whether the cases are suitable. The interesting feature is that most of the cases are sent to the Union.

Here the method of choice is completely irresponsible and it is high time that potential doners took steps to see that their money is wisely used.

George Sacks.

National Mutual Building,
Church Square, Cape Town.
15 January 1950.

Facial Appearance in Leprosy

To the Editor: One needs must be almost apologetic in presenting the facial appearance in a classical case of leprosy. However, as our M.O.H. reports about three cases a year passing through his hands, it needs must be some 33 years before every practitioner in a town of this size will have seen a case.

The case illustrated was in a child of seven years seen at the Out-Patient Department. The child was born in Port Elizabeth, which he had never left. There was denial of any contact and proof had perforce to be by biopsy.

Acknowledgments are made for the excellent photography by Dr. M. M. Friedman.

P. Jabkovitz.

114 Park Drive,
Port Elizabeth,
12 January 1950.